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Agricultural Memorandum No. 318

Choice of dates for Mean Temperatures Critical to Hop Quality

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The previous Ag. Mem. (No. 316), selected, somewhat arbitrarily, the range of dates, July 1st to date of picking for examination of the mean temperature - alpha acid relationship.

The present memorandum examines ranges from July 6th, 11th and 16th.

Year	Alpha-acid (%)	Mean Temperatures to date of picking (°C) From July 1st	July 6th	July 11th	July 16th
1959	16.0	19.58	19.68	19.30	19.30
1964	16.0	18.35	18.72	19.18	19.30
1958	16.6 (Optimum)	17.95	17.93	18.02	17.86
1968	15.3	17.44	17.14	17.04	16.96
1961	14.8	17.05	16.84	16.88	16.80
1963	14.7	16.82	16.75	16.74	16.83
1960	14.6	16.54	16.79	16.95	16.88
1966	14.0	16.77	16.61	16.65	16.68
1965	13.8	16.53	16.75	17.01	16.84
1962	13.3	16.18	16.45	16.53	16.44
1967	13.8(Anomalous)	18.53	18.58	18.79	18.51

For the July 1st onwards date, 18°C was selected as the optimum temperature and where A = deviation below 18° and B = deviation above 18°, it was found that the quality Q = 16.25 - 1.5A - 0.2B with a mean error of 0.25.
Taking 17.5°C as the optimum temperature for other ranges the equations found were

July 6th onwards Q = 16.57 - 3.0A - 0.3B, mean error 0.22
11th onwards Q = 16.34 - 2.9A - 0.16B, mean error 0.32
16th onwards Q = 16.75 - 3.3A - 0.42B, mean error 0.18
1967 being ignored in each case,
The largest error in the remaining 10 years was 1965 when the hops were only sampled on 3 significant days.

As the correct range is likely to be tied to a crop stage, July 16th is possibly a more sensible start, but the date must vary from year to year and so further attempts to resolve the start are pointless.

Any comments or suggestions on this paper should be referred to the author.

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